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THE 1989 SUMMER SKY

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June-October 1989

June:

On Wednesday, June 21, at 2:53 local time, the Sun is directly overhead at the Tropic of Cancer, marking the start of summer. On June 18, *Mercury* reaches greatest elongation, but since it is south of the ecliptic, it is very difficult to observe. On June 22, *Mercury* is about 3° north of Aldebaran. *Venus* is also difficult to observe this month. The crescent Moon passes *Venus* on June 4-5. *Mars* is low in the western sky at sunset. *Jupiter* is in conjunction with the Sun on June 9 and is not visible for the entire month. *Saturn* is in Sagittarius and rises shortly after sunset. On the night of the 19th, *Uranus* is approximately 4° north of the Moon.

July:

On Tuesday, July 4, the Earth is at aphelion (its maximum distance from the Sun [152,000,000 km]). *Mercury* is in superior conjunction and not visible this month. *Venus* is very difficult to observe during July. It passes about 0.5° north of Mars on July 11-12. *Mars* moves from Cancer into Leo during the month. By the end of the month, it is not visible. *Jupiter* moves from Taurus into Gemini during the month. *Saturn* remains in Sagittarius.

August:

Watch for the Perseid meteor shower. This popular shower peaks on August 12, but meteors can be detected from about July 25 to August 17. On a dark night, during the peak, one can expect to see about 50 meteors per hour. It is best to look after midnight, but one will be able to see some before midnight. *Mercury* is at its greatest eastern elongation on August 29, but viewing is unfavorable. *Venus* and *Mars* are also in poor positions for viewing. *Jupiter* is becoming a morning object. By the end of the month, it will rise shortly before midnight. *Saturn* is low in the southeast at sunset.

September:

Mercury, *Venus* and *Mars* are all difficult, if not impossible, to observe this month. *Jupiter* rises at about midnight. *Saturn* is in the southwest

and sets about five hours after the Sun.

October:

Mercury, *Venus* and *Mars* are all difficult, if not impossible, to observe this month. *Jupiter* rises before midnight. *Saturn* is in the southern sky and sets about four hours after the Sun.

Astronomy News

Most of us have at one time or another in our lives seen a meteor, or "shooting star," on a clear night. This phenomenon usually appears as a brief streak of light in the sky. A meteor occurs when a tiny meteoroid intercepts the Earth's atmosphere and meets a fiery destruction due to the tremendous friction it encounters.

But have all the meteor paths you have seen been straight? Recently, professional attention has been directed to reports of those that are not--those that appear to curve or even wobble. Stories of such rare and peculiar meteors were originally dismissed until the events themselves were recorded in photographs.

The explanations for why a meteor may not fall downward on a linear path are the same as those used for certain familiar sights in sports. A spherical body that is spinning can create aerodynamic lift that may alter the body's path in flight. The famous curveball thrown by baseball pitchers is an example. Meteoroids may be spherical, and they may also rotate. Meteoroids that are not symmetrically shaped may also precess as they rotate. Precession is the wobble we see in a spinning top. An example of the path of a precessing object (that is also moving linearly) can be seen on the football field: the elongated ball, when passed, may seem to spiral as it heads toward its receiver.

Have you ever seen a meteor on a nonlinear path? If so, the authors would like to hear about it. Meanwhile, we'll keep looking ourselves!

Resources

The story is often repeated. A school obtains an astronomical telescope at significant expense. Time passes and personnel and facilities change, and maintenance problems accumulate. The result: a once proud telescope acquires a new home in a remote closet and falls into disuse. Recently, a happier set of circumstances fell upon a major telescope in the state of Iowa. The story of this telescope tells of what can happen when educators, public officials and interested laypersons join together for the betterment of science education in a community.

A fine instrument often ends up in the possession of a school that might not otherwise be able to afford it. Such was the case when Burlington High School obtained a refracting telescope from amateur

astronomer John H. Witte in 1939. The telescope was manufactured by the firm of Alvan Clark and Sons, the premiere telescope manufacturing company in the United States for over a half a century. The Witte telescope has an aperture of twelve inches--no small instrument even today.

In 1973, Burlington constructed a new high school complete with an observatory equipped with a sixteen-inch reflecting telescope. By the 1980's the Clark refractor was collecting dust. It might have languished in storage were it not for the efforts of amateur astronomers in Des Moines County. In 1983, they banded together to form the Southeastern Iowa Astronomy Club. In a three-way arrangement, Burlington Schools agreed to donate the instrument to this club with the proviso that it be restored. The Des Moines County Conservation Board agreed to provide land for an observatory site with the understanding that the club would provide observing and educational programs for the general public. Members of the club refurbished the old telescope with a grant from the J.H. Witte Foundation. Today, the preserved historic refractor is housed in a modern building, complete with classroom, at the Big Hollow Creek Conservation Area.

The observatory is open to the public on the first Friday evening of every month. To reach the observatory, take Highway 61 north from Burlington and turn west at the Sperry turn-off. From there, travel 2 1/2 miles (until the road ends at a "T" intersection) and turn left. The observatory is approximately 1/10 of a mile from the intersection. Interested persons are invited to attend club meeting/observatory sessions on the third Friday evening of every month. The current president of the Southeast Iowa Astronomy Club is David Philbaum (ph. 319-754-4822).

We applaud the cooperation from the educational, governmental and private sectors that made this arrangement possible--an arrangement probably impractical without such cooperation and one that will provide students and non-students alike with opportunities for enrichment in astronomy for many years to come.

The information about the sky in this bulletin was obtained from the following: the 1989 *Observers Handbook*, pp. 42-51, and from *Activities in Astronomy*, p. 66, Hoff, Kelsey and Neff, 2nd edition, Kendall-Hunt Publishing, 1984.

For more information on current astronomical events, the following are recommended:

Astronomy. AstroMedia, a division of Kalmbach Publishing Company, 1027 N. Seventh St., Milwaukee, WI 53233.

- Observers Handbook.* Bishop, R.L. 1989. The Royal Astronomical Society of Canada, 136 Dupont St., Toronto, Ontario, Canada M5R 1V2.
- Sky Calendar.* Abrams Planetarium, Michigan State University, East Lansing, MI 48824.
- Sky and Telescope.* Sky Publishing Corporation, 49 Bay State Road, Cambridge, MA 02238-9102.